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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,737	03/24/2005	Gerd Meier	DNAG-287	5262
24972	7590	11/03/2006		
FULBRIGHT & JAWORSKI, LLP 666 FIFTH AVE NEW YORK, NY 10103-3198			EXAMINER BALDWIN, GORDON	
			ART UNIT	PAPER NUMBER

1775

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/506,737	Applicant(s) MEIER ET AL.	
	Examiner Gordon R. Baldwin	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33-44 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 33-44 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 41 and 42 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. SiC should be recited in claim 33, additionally, all the other limitations are repetitive.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 33-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Under claim 33, the choices for the non-metal or ceramic do not include SiC (line 4 and 5 of claim (33)). It is also not clear if the silicate and the titanium oxide are still choices, since the language of lines 5-8 of claim 33 only describe aluminum oxide and silicon carbide. Additionally, it is not clear whether the characteristics in claim 33 are directed to the aluminum oxide, silicon oxide, or to the whole material.

Claim 34 recites the limitation "SiC" in line 2 of claim 43. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 33, 35, 41 and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Murray (GB 1415507).

Consider claim 33, 41 and 42, Murray teaches a metal ceramic composite with one metal phase and one non-metallic inorganic component that is used in a seal in a sliding engagement having 55-80 percent aluminum and 20-45 percent alumina. (Col. 1 lines 1-35)

As for the thermal conductivity, flexural strength, modulus of elasticity and Ra values, it has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a prima facie case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The ***prima facie*** case can be rebutted by

evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

Consider claim 35, Murray teaches that the rubbing seal can be used as a piston ring in a reciprocating piston machine. (Col. 2 lines 44-50)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murray (GB 1415507) as applied to claims 33 and 35 above, and further in view of Ritland (Pat. No. 6,338,906).

Consider claim 36-40, Murray teaches the claimed invention, Murray does not teach the use of slide/friction pairing with a combination of carbon (the primary ring) and a MCC, such as alumina and aluminum, for the mating ring. However, Ritland teaches two ring seals systems, that can be used in sliding, consisting of a primary and mating ring with the primary being made of carbon or a carbon-like material and the mating ring made of a harder material, such as ceramic or metal. (Col. 1 lines 40-50) Ritland also teaches the use of ceramics such as alumina, silicon carbide as well as hard metals such as aluminum and titanium. (Col. 2 lines 43-65) Therefore, Ritland teaches the combination of carbon (the primary ring) and a MCC, such as alumina and aluminum,

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for the mating ring. Additionally, look to silicon carbide as well as zirconia and alumina for suitable ceramics (Col. 2 lines 55-65) to use as MCC/MCC pairings for the dual ring seals. It would have been obvious to a person of ordinary skill in the art at the time of invention to have combined the seal in a sliding engagement as in Murray with the two ring seals system of Ritland to make a sliding member with better resistance to chemicals and thermal conductivity. (Col. 2 lines 24-32)

Consider claim 41, Ritland teaches the use of aluminum in the metallic phase for the metal-ceramic composite. (Col. 2, lines 55-65)

Consider claim 42, Ritland teaches the use of silicon carbide, as well as silica and alumina or aluminum oxide. (Col. 2 lines 55-65)

Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murray (GB 1415507), Ritland (Pat. No. 6,338,906) and further in view of Creber (Pat. No. 5,340,655).

Consider claims 43 and 44, The combination of Murray and Ritland teach friction/sliding rings made of the same material and in the same orientation as the applicant, however, they do not specifically mention that the combined metal and ceramic composites can also contain a fiber reinforcement. Creber teaches that it is well known to integrate fibers into the ceramic matrix, such as silicon carbide (Col. 15 lines 40-65), in addition to a variety of other ceramic and metal composites, including aluminum oxide (Col. 14 lines 1-65) that are used in engine components, including pumps (Col. 1 lines 40-62), which are considered to include fuel pumps as the applicant

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mentions in the specification. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the friction/sliding rings and materials of Murray and Ritland, with the introduction of fiber to a ceramic and metal composite taught by Creber to improve the strength and reliability of ceramic articles in engine components. (Col. 1 lines 40-62)

Response to Arguments

Applicant's arguments with respect to claims 19-32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon R. Baldwin whose telephone number is (571)272-5166. The examiner can normally be reached on M-F 7:45-5:15.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GRB


JENNIFER MCNEIL
SUPERVISORY PATENT EXAMINER
10/30/04